Micronucleus Test of Piroctone Olamine in Mice

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Summary

In order to measure the potential for inducing chromosomal aberrations of Piroctone Olamine (PO), a micronucleus test was carried out in ICR male mice.

Single and repeated (4 days) administration of PO suspended in 2 % Arabian rubber solution was given intraperitoneally. The LD_{50} was a guide in selecting dose levels. For the single administration, 125, 62.5 and 31.3 mg/kg (1/2, 1/4 and 1/8 of the LD_{50}, respectively) were used. For the 4-day repeated administration, four equal portions of 125, 62.5, 31.3 and 15.6 mg/kg (1/2, 1/4, 1/8 and 1/16 of the LD_{50}) were given daily for four days.

2 % Arabian rubber solution was used as the negative control, and the positive control was 2.0 mg/kg mitomycin C (MMC).

Animals were sacrificed 24 hours after the treatment, and the femoral bone marrow was removed for giemsa smear preparation.

The incidence of micronucleated cells per 1000 polychromatic erythrocytes per animal was scored.

As a result, there was no significant increase in the formation of micronuclei in the mouse polychromatic erythrocytes either in the single or the 4-day repeated administration of PO, as compared with the negative control. Therefore, it was concluded that PO had no potential for the induction of chromosomal aberrations.

On the other hand, the group treated with 2.0 mg/kg MMC showed a significant increase in the micronuclei formation in mouse polychromatic erythrocytes both in the single and the 4-day repeated administration, as compared with the negative control.

LD_{50}, i.p., male mice

付表－1　腹腔内投与による死亡率及びＬＤ50値

投与量（mg／Kg）	動物数	死亡率
845.0	5	5／5
650.0	5	5／5
500.0	6	6／6
385.0	7	6／7
296.0	7	7／7
228.0	6	2／6
175.0	5	0／5

ＬＤ50値（９５％信頼限界）

248.09（200.22～291.77）mg／kg